REMARKS / ARGUMENTS

I. General Remarks

Please consider the application in view of the following remarks. Applicants thank the Examiner for his careful consideration of this application.

II. Disposition of Claims

Claims 1-7 and 32-34 are pending in this application. Claims 8-31 were withdrawn in response to a prior restriction requirement, and have been cancelled herein.

Claims 2-4 have been amended herein, and claims 33 and 34 are new. These amendments and additions are supported by the specification as filed.

Claims 1-4, 6, 7, and 32 stand rejected under 35 U.S.C. § 102(b). Claim 5 stands rejected under 35 U.S.C. § 103(a).

III. Rejections of Claims

A. Rejections of Claims Under 35 U.S.C. § 102(b)

Claims 1-4, 6, 7, and 32 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,002,125 to Phillips *et al.* ("*Phillips*"). With respect to these rejections, the Office Action states:

> "The Phillips et al patent discloses polymers useful in the formation of stable fracturing fluid, which include polysaccharides and polysaccharide derivatives, wherein guar, hydroxypropyl guar, hydroxyethyl guar, cellulose and its derivatives, and xanthan are set forth as examples (see column 9, last paragraph and column 10, lines 1 and 2). The Phillips et al patent discloses cross-linking agents in combination with solutions of polymeric thickening agents, which include multivalent metal ions, wherein iron is listed as an example of a multivalent metal ion that may be used in the combination. Phillips et al discloses that the combination of cross-linking agents and polymers include admixing guar and its derivatives as a polymer with a cross-linking agent, wherein compounds suitable for use as crosslinking agents include acetylacetonate ions in the form of titanium acetylacetonate (see column 10, 2nd full paragraph). The Phillips et al patent discloses that titanium acetylacetonate is an effective agent for hydroxypropyl guar or carboxymethyl hydroxypropyl cellulose (see column 10, lines 28-30). The guar, hydroxypropyl guar and hydroxyethyl guar of the Phillips et al patent anticipate the guar, hydroxy ethyl and hydroxyl propyl derivatives of gums in instant Claim 2, the iron set forth in the Phillips et al patent anticipates the iron disclosed in instant Claims 3 and 7, and the titanium acetylacetonate disclosed in the Phillips et al patent anticipates the acetylacetonate ions disclosed in instant Claim 4."

(Office Action at page 3.) Applicants respectfully disagree.

In order to form a basis for a rejection under 35 U.S.C. § 102(b), a prior art reference must disclose each and every element as set forth in the claim. MANUAL OF PATENT EXAMINING PROCEDURE § 2131 (2004). Applicants respectfully assert that *Phillips* does not disclose every element of Applicants' claims because *Phillips* does not disclose the step of derivatizing a polysaccharide with a metal coordinating group to produce a derivatized polysaccharide having bidentate ligands. Therefore, *Phillips* cannot anticipate Applicants' claims.

First, *Phillips* does not disclose any method or process that includes derivatizing a polysaccharide. *Phillips* does mention that polysaccharide derivatives may be used in the fracturing fluids disclosed therein (*see Phillips* at col. 9, ll. 60-68), but it does not disclose or teach the step of derivatizing a polysaccharide with a metal coordinating group, as recited in claims 1 and 32. The Office Action notes that *Phillips* discloses fluids that comprise polysaccharides and titanium acetylacetonate, and asserts that "the titanium acetylacetonate disclosed in [*Phillips*] anticipates the acetylacetonate ions in instant Claim 4," and thus anticipates the limitation of bidentate ligands in claims 1 and 32. (Office Action at page 3.) However, *Phillips* discloses the use of titanium acetylacetonate as a cross-linking agent. (*See Phillips* at col. 10, ll. 22-26.) Derivatizing and crosslinking are completely different chemical reactions that result in completely different molecular structures (for example, as illustrated in Equations 2 and 3 of Applicants' specification, respectively). Therefore, *Phillips'* teaching of crosslinking molecules of a polysaccharide with titanium acetylacetonate does not anticipate the step of derivatizing a polysaccharide with a metal coordinating group, as recited in Applicants' claims.

Moreover, *Phillips* does not disclose producing a derivatized polysaccharide having bidentate ligands. Applicants have defined the term "bidentate ligands" to refer to Lewis bases that donate two pairs of electrons to a metal atom to form a 5, 6, or 7 member ring. (*See* Specification at ¶ 012.) The Office Action does not indicate that the derivatized polysaccharides disclosed in *Phillips* have any such ligands. Even more specifically, with respect to new claims 33 and 34, *Phillips* does not disclose bidentate ligands that comprise 2, 2'-bipyridine ligands.

Therefore, because *Phillips* does not teach derivatizing a polysaccharide with a metal coordinating group to produce a derivatized polysaccharide having bidentate ligands, Applicants respectfully assert that *Phillips* does not disclose each element of claims 1 and 32, as

amended herein. Thus, *Phillips* cannot anticipate these claims, and claims 1 and 32 are allowable over *Phillips*. Moreover, since "a claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers," and since claims 2-4, 6, 7, 33, and 34 depend, either directly or indirectly, from independent claim 1 or 32, these dependent claims are allowable for at least the same reasons. *See* 35 U.S.C. § 112 ¶ 4 (2004). Accordingly, Applicants respectfully requests the withdrawal of these rejections.

B. Rejections of Claims Under 35 U.S.C. § 103(a)

Claim 5 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over *Phillips*. With respect to this rejection, the Office Action states:

> "The instant method of crosslinking a polysaccharide differs from the polysaccharide crosslinking of the Phillips et al patent by claiming that the crosslinking agent is present in an amount up to about 500 moles of crosslinking agent per mole of polysaccharide. The number of moles of crosslinking agent per mole of polysaccharide is not disclosed in the Phillips et al patent. However, Phillips et al does suggest using an amount of crosslinking agent that falls within the instantly claimed range by disclosing in column 5, lines 36-45 that cross-linking agents are used to increase the viscosity of the initially formed aqueous solution from a first elevated value after the polymeric thickening agent has reached an initial state of hydration in the fracturing fluid to yet a higher stabilizing value. Phillips et al discloses that during displacement of the fracturing fluid down the well, the viscosity of the fracturing fluid is increased by a factor of at least 2 to a value sufficient to stabilize the energizing phase in the aqueous fracturing fluid phase. Note that the recitation "in an amount up to about 500 moles of crosslinking agent per mole of polysaccharide" is absent of a specific lower limit. The range of the ratio could be interpreted as 0 to 500 moles of crosslinking agent per mole of polysaccharide.
>
> Accordingly, it would have been obvious to one of ordinary skill in the art at the time of Applicants invention having the Phillips et al patent before him to use a sufficient amount of crosslinking agent to obtained a higher stabilizing value of the fracturing fluid in view of the closely related structures (polysaccharide and crosslinking agents) used to carry out the process thereof and the resulting expectation of similar polymeric thickening properties.

(Office Action at pages 5-6.) Applicants respectfully disagree.

To form a basis for a § 103(a) rejection, a prior art reference must teach or suggest each element in the claim. MANUAL OF PATENT EXAMINING PROCEDURE § 2142 (2004). However, as discussed in Section III.A. above, *Phillips* does not teach or suggest derivatizing a polysaccharide with a metal coordinating group to produce a derivatized polysaccharide having bidentate ligands, as recited in claim 1. Therefore, because *Phillips* does not teach every element

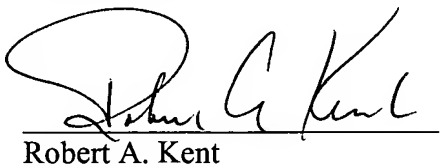
of claim 1, *Phillips* cannot obviate that claim. Since "a claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers," and since claim 5 depends, directly or indirectly, from claim 1, this dependent claim includes the limitations of claim 1 that *Phillips* does not teach or suggest. *See* 35 U.S.C. § 112 ¶ 4 (2004). Therefore, Applicants respectfully assert that claim 5 is allowable over *Phillips*, and respectfully request the withdrawal of this rejection.

SUMMARY

In light of the above remarks, Applicants respectfully request reconsideration and withdrawal of the outstanding rejections. Applicants further submit that the application is now in condition for allowance, and earnestly solicit timely notice of the same. Should the Examiner have any questions, comments or suggestions in furtherance of the prosecution of this application, the Examiner is invited to contact the attorney of record by telephone, facsimile, or electronic mail.

Applicants believe that there are no fees due in association with this filing of this Response. However, should the Commissioner deem that any additional fees are due, including any fees for extensions of time, Applicants respectfully request that the Commissioner accept this as a Petition Therefor, and direct that any additional fees be charged to the Deposit Account of Halliburton Energy Services, Inc., No. 08-0300.

Respectfully submitted,



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